

Canine leptospirosis in King County – 2011

A total of 8 canine leptospirosis cases (6 confirmed, 1 probable and 1 possible) were reported in King County (KC) in 2011. Leptospirosis cases initially surged 6 years ago when, between December 2005 and April 2006, 32 cases in dogs from Vashon Island and 10 elsewhere in KC were reported to Public Health. At the same time, an outbreak occurred on Bainbridge Island (Kitsap Co.). Cases on Vashon Island dropped off after this single surge was observed and cases in King County have fluctuated during the last 7 years with no discernible geographic predilection. The lowest numbers of cases in recent years were reported in 2009 and 2011, as shown in the accompanying Figure (excludes leptospirosis reports classified as “possible cases”). It is unclear whether these more recent annual changes represent real differences or are related to under-detection and/or under-reporting. Leptospirosis is rare in cats, but one confirmed feline case has been reported in KC, as well as an equine case. The 2011 cases included all 7 common serovars although not all reached a titer of 1:800, which is considered diagnostic for surveillance purposes in cases with acute onset of clinical signs compatible with leptospirosis and no history of recent vaccination for leptospirosis. Unfortunately, convalescent titers are often not available, so it is not possible to know which serovar or serovars the infection might be attributed to.

Leptospire are maintained in nature by chronically infected reservoir hosts. While our knowledge of the local epidemiology is incomplete, the literature suggests that rodents, pigs and horses are reservoirs for Bratislava; rats for Icterohaemorrhagiae; and raccoons for Autumnalis. Recent evidence suggests that seroreactivity to Autumnalis may actually represent cross-reactivity to other serovars. In a 2006 serosurvey of healthy dogs from 15 local health jurisdictions in Washington State, 17% had serological evidence of exposure to one or more leptospira serovars. The most frequently detected serovars were Autumnalis, Icterohaemorrhagiae, and Canicola. Raccoons (n=113) were also tested with positive titers to Autumnalis found in 13%, Pomona in 13%, and Icterohaemorrhagiae in 5%.¹

Of the 8 KC cases in 2011 with information about outcome, 2 (25%) died or were euthanized. Cases were from all areas of the county and were reported throughout the year. Cases ranged in age from 1 to 12 years and a variety of breeds were affected, including toy breeds. Two of the dogs had been vaccinated for leptospirosis several years earlier (both survived), 3 had never been vaccinated, and vaccination status was unknown for the remaining 3 dogs.

Leptospirosis is a re-emerging zoonotic infection. It occurs worldwide but is more common in temperate and tropical areas of the world. Infection is transmitted primarily through contact with water contaminated with the urine of infected animals, either through ingestion of water or by direct contact with mucosal membranes or abraded skin. Control of infection in livestock and pets reduces the risk of human disease, but the existence of wildlife reservoirs complicates prevention. Rodent and raccoon control is particularly important around the home and in recreational areas with human presence. People should avoid contact with water, soil and vegetation contaminated with urine from animals or wear protective clothing and footwear in areas that are possibly contaminated. Veterinary staff should take precautions to avoid exposure to animal urine. Between 0 and 5 human leptospirosis cases are reported in WA State annually; no cases have been reported in King County since 2007. None of the human cases have been linked to reported canine infections in WA.

A canine vaccine containing the serovars Icterohaemorrhagiae, Canicola, Grippotyphosa, and Pomona is now available. The vaccine may provide cross-protection to other serovars -- there is evidence that the Pomona component may protect against Autumnalis -- but this is an area needing more research. Our impression at Public Health is that an increasing number of veterinary practices in KC are recommending vaccination for their canine patients. WSU's Community Practice Vaccination Protocol recommends the 4-way vaccination for dogs at risk of infection, with a booster given a month before high risk activities such as hunting or outdoor recreation involving water exposure.² The 2010 ACVIM Consensus Statement on Leptospirosis notes that while naturally occurring canine Leptospirosis has been documented in dogs

vaccinated with the bivalent vaccine (containing Icterohaemorrhagiae and Canicola), the panel was unaware of leptospirosis in dogs fully vaccinated with the 4-serovar vaccine, but published data are lacking.³

- Leptospirosis case report forms can be downloaded from www.kingcounty.gov/health/zoonotics (see Resources for Veterinarians on the sidebar).
- Public Health--Seattle & King County staff are available to advise owners of animals diagnosed with leptospirosis on zoonotic transmission risks and prevention. **Call the Zoonotic Disease program at (206) 263-8454 with questions or to request consultation with a pet owner.**

References

¹ MA Davis et al. Serological Survey for Antibodies to Leptospira in Dogs and Raccoons in Washington State. Zoonoses Public Health. 2008;55: 436–442.

² WSU CVM Community Practice Vaccination Protocols: November 2011. Available at www.vetmed.wsu.edu/depts-vth/vaccinations.aspx

³ JE Sykes, et al. 2010 ACVIM Small Animal Consensus Statement on Leptospirosis: Diagnosis, Epidemiology, Treatment, and Prevention. J Vet Intern Med. 2011; 25: 1–13. Available at www.ncbi.nlm.nih.gov/pmc/articles/PMC3040842/?tool=pubmed

Additional information about leptospirosis is available at the following web sites:

- Public Health- Seattle & King County: www.kingcounty.gov/health/zoonotics
- Report of a local veterinarian with severe Leptospirosis contracted after examining a pet rat: www.doh.wa.gov/ehsphi/epitrends/08-epitrends/08-02-epitrends.pdf
- ACCES-Animal Critical Care & Emergency Services, 2011 winter newsletter: -- Dr Beth Davidow describes recent local cases and discusses zoonotic risks, diagnosis, treatment, and vaccination: www.criticalcarevets.com/winter%20newsletter%202010-2011.pdf
- Center for Food Security & Public Health, Iowa State University: www.cfsph.iastate.edu/Factsheets/pdfs/leptospirosis.pdf

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